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BRITISH GUIANA

its agriculture and trade

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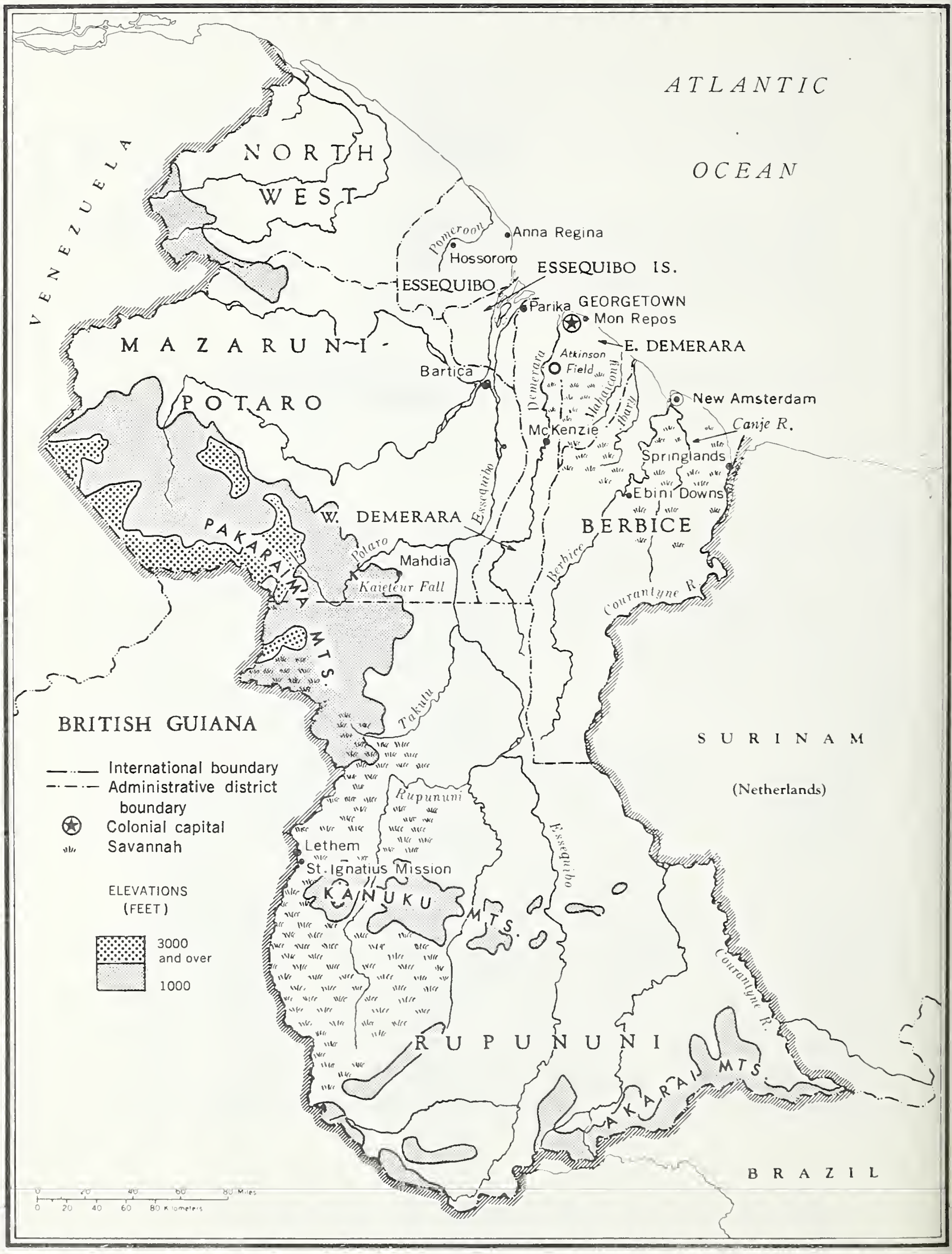

U.S. Department of Agriculture Neg. ERS 1541-62(11) Economic Research Service

CONTENTS

Page

Summary---------- iv
Introduction---------- 1
Physical characteristics and population---------- 1
  Topography---------- 1
  Climate---------- 2
  Soils---------- 3
  Population---------- 4

Institutional characteristics---------- 5
  Land use---------- 5
  Size and tenure of farms---------- 6
  Land development---------- 7
  Production practices---------- 8
  Agricultural policies---------- 10
  Agricultural credit---------- 11
  Education, research, and extension---------- 12
  Technical assistance---------- 13
  Cooperatives---------- 13
  Marketing and transportation---------- 13

Agricultural production---------- 15
  Export crops---------- 16
  Domestic crops---------- 23
  Other food crops---------- 25
  Livestock and livestock products---------- 27

Trade---------- 33
  Exports---------- 35
  Imports---------- 35
  Trade policies---------- 37
  Trade with the United States---------- 37

Outlook for agriculture and trade---------- 39

References---------- 42

"Ton" in this report means a short ton of 2,000 pounds.

Washington, D.C. March 1963

SUMMARY

British Guiana, located on the northeast coast of South America, is slightly larger than the State of Kansas and has about a fourth of the population of that State. But the greater part of the population and practically all the agriculture is concentrated within the 10 to 50 mile-wide coastal belt. The center of the country is a densely forested plateau sloping to the north and intersected with numerous rivers made unnavigable by rapids for any distance. To the south lie ranges of mountains, the highest peak being 8,635 feet.

The country had a Gross National Product of $150 million in 1960, agriculture's share being 42 percent. Per capita income is $250, about average for Latin America and about the same as that of Surinam and Mexico.

Over half the population depends on agriculture for a living. With population growing rapidly at the rate of 3 to 4 percent per annum, the demand for agricultural land increases and the need for industries to provide more opportunities for employment is evident. However, the climate for new investment has become difficult because of current government policies.

Agriculture contributes over three-fifths of total exports, with minerals--chiefly bauxite--and forest products accounting for most of the remainder.

Sugar and rice are the dominant crops in the economy. Minor crops are coconuts, coffee, cacao, citrus, and such food crops as plantains, cassava, corn, sweetpotatoes, and fruit which supply the greater part of the country's needs. British Guiana depends on imports to meet the demand for wheat flour, dairy products, pulses, potatoes, fish, and, to a lesser extent, meat.

The Government's 1960-64 Development Program is designed to improve agricultural practices and diversification of crops. It also includes plans for developing selected areas so as to bring more land under beneficial occupation, to develop family-size farms, and to encourage the building of an economically independent farm community. Under this program a greater interest is being taken in the development of the livestock industry by both the Government and the ranchers.

In order to meet the need for quality standards which are virtually nonexistent in British Guiana, the Director of Agriculture published a grading manual in 1961. This manual establishes legal standards for many agricultural products, including coffee and cacao.

Major problems for agriculture are the heavy expenditure needed for land reclamation and upkeep, and the difficulty and cost of transportation and marketing. A road to the interior would serve the ranchers of the Rupununi and open up the country, but funds are not presently available for such an undertaking.

The country's economic progress has been upward and this trend is expected to continue in the long-range outlook, but the short-range trend is dependent upon current government policies. Agricultural trade will continue with indications of increased rice exports but with no immediate prospect of a significant increase in sugar exports. As population growth requires increased food imports, United States exports of wheat flour and other products are expected to share in this increase.

BRITISH GUIANA - ITS AGRICULTURE AND TRADE

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INTRODUCTION

British Guiana is a country ready for "self sustained economic growth" in the words of the party in power--the People's Progressive Party, whose leader is the Premier, Dr. Cheddi Jagan. Its natural resources are limited, however, and capital is needed to enable it to meet its development requirements.

British Guiana has had internal self-government since August 1961 and is looking forward to complete independence. This country--the only English speaking area on the South American continent--was originally settled by the Dutch. It was occupied by other countries, and finally ceded to Great Britain in 1814. The early influence of the Dutch is still reflected in its place names and in the dike system along the coast, which made agriculture possible in these low lands.

The name Guiana is Indian, meaning "land of waters" and this characterizes the three Guianas, British, French, and Netherlands (Surinam). The waters require systems of control to make the land available for agriculture. Dikes keep out the sea, and drainage and irrigation canals, where constructed, keep swamps from flooding during the rainy season, and supply water for irrigation during the dry season.

PHYSICAL CHARACTERISTICS AND POPULATION

British Guiana is situated in the northeast of South America between Venezuela and Surinam and bounded on the south by Brazil. It has a coast line of 270 miles. Politically it comprises three counties stretching north and south: Berbice, Demerara, and Essequibo.

Topography

British Guiana has an area of 83,000 square miles (53,120,000 acres), with three principal natural divisions: the coastal plain, the gently undulating central plain, and the highland region.

The low-lying coastal plain which varies in width from 10 miles in the west to 50 miles in the east, requires dikes and drainage canals to keep the sea out and prevent flooding.

But the central plain, which occupies most of the interior, undulates gently from a 400-foot elevation to about 50 feet near the coast. It is pierced by ranges of hills extending from the mountains to the west and these give rise to rapids which impede river transportation.

The highland region occupies most of the west and south of the country. The Pakaraima Mountains and the Kaieteur plateau, with peaks up to 8,600 feet, occupy the west central part of the country. It is from this plateau that the Potaro River drops 741 feet to the plains to form the beautiful Kaieteur Fall, a tourist attraction. The two other principal mountain ranges are the Kanuku and the Akarai in the far south, the latter range forming a boundary with Brazil. Both ranges rise to about 3,000 feet. These mountain ranges are densely wooded and are believed to have good agricultural land in their valleys.

Dense forests cover the greater part of the country except the plateaus and the two extensive grassland areas which are about 300 to 400 feet above sea level: the Rupununi savannas to the southwest which are divided in the center by the Kanuku range, and the Intermediate savannas in the northeast in Berbice.

A large network of rivers, most of which flow north into the Atlantic Ocean, covers the entire country. The four most important are the Courantyne, Berbice, Demerara,and Essequibo, the latter three giving their names to the three counties in the country. Most of the rivers are navigable for 40 to 100 miles, which is a comparatively short distance as the country extends from 300 to 500 miles inland.

Georgetown, the capital and chief port of the country, lies at the mouth of the Demerara River. The only other large town, New Amsterdam, is located about 5 miles from the mouth of the Berbice River.

Climate

The climate is typical of equatorial regions with high rainfall and humidity and a narrow range of temperature which seldom reaches 90 degrees Fahrenheit in the shade as the heat is tempered by trade winds blowing in from the sea. In the forested interior the temperature is higher. British Guiana is not subject to hurricanes, and earthquakes are infrequent, but there are "earth tremors" in most years.

Annual rainfall averages 90 inches on the coast, is heavier in the forests of the interior as far as the Pakaraima Mountains, and diminishes to about 50 inches in the Rupununi savannas. Here sucking and biting insects increase with the rise in humidity during the wet season, but during the dry season the low humidity and cool winds make living conditions pleasant. The climate of the coastal zone is suitable for tropical crops.

There are two rainy seasons in most of the country, from mid-April to mid-August and from mid-November to mid-February, but in the Rupununi savannas there is a single rainy season, from April to September. Although May to August is the wettest part of the year in the Intermediate savannas, about 50 percent of the rainfall is generally well distributed over the other 8 months of the year. However, the effectiveness of the rainfall is very low because of the sandy soils, the sparse vegetation, and the pleasant drying breeze which regularly blows across the savannas.

Soils

Inherently fertile soils are limited mainly to the low coastal zone. Not all soils even in this zone, however, are productive. Nearly all are too wet for most crops other than rice. Yet, with adequate drainage many of the coastal soils could be made productive of other cultivated crops and forage. Some that are potentially productive would require a higher order of technical skill for sustained production than is common in British Guiana today.

While most cultivated crops require mainly drainage, such crops as rice and sugarcane also require irrigation at times.

Along with water control through drainage and irrigation, there are problems in soil fertility. Some soils contain sulfides and when drained become highly acid and unfavorable for agriculture. Some soils contain toxic amounts of soluble aluminum or soluble salts, and other soils have modest supplies of most plant nutrients but require careful fertilization for sustained production. Calcium and phosphorus are the most common nutrients needed.

In this low coastal zone, wet clays and wet peats are by far the predominant soils. Sandy soils, while scarce, nevertheless are important. They occur as narrow parallel strips near the coast and on the west side of estuaries. These lie slightly higher than the intervening clays and are better drained. It is on these sandy soils that most of the country's production of coconuts are grown, and these soils are preferred for citrus and other fruits and vegetables, although such crops are also grown on the clays and peats where the drainage is sufficiently improved. The scarce sandy soils are also preferred as sites for building roads and houses.

South of the low coastal zone, and extending for as much as 100 miles inland in some places, there is a large area of well-drained sands. These soils are low in fertility and, with exceptions, most of them have a low potential for agriculture. Among these soils are some that are less sandy, and respond to management under the highly favorable rainfall distribution common to this part of British Guiana. With proper fertilization, these sandy soils have a high potential for the production of a variety of crops and forage. The uplands lie south of the sandy area and make up the remaining part of British Guiana--between two-thirds and three-fourths of the country. These uplands, flat in some places and highly dissected and mountainous in others, have highly weathered, highly leached soils of low fertility; and, on the flat or nearly flat places, these soils also contain hard laterite, another unfavorable characteristic. Not only are these soils low in fertility, but they have a high capacity for making phosphorus unavailable to plants, thereby reducing drastically any response from applications of phosphorus, an important nutrient in which the soils are deficient. The soils of the uplands, mainly on the valley slopes, are used to a limited degree for agriculture by the indigenous people, but the culture practiced is that of shifting cultivation.

While British Guiana is not rich in soil resources, it is using today only a relatively small proportion of the soils that have a substantial potential for agriculture. The sands south of the low coastal zone and the soils in the uplands, while generally possessing a low potential for agricultural production, nevertheless appear to have a significant potential for timber production.

Population

With a population of 558,769 (April 1960 census) the country has a density of 6.7 persons per square mile. However, this first picture is misleading because 90 percent of the population live in the narrow coastal zone which covers 4 percent of the total area. The density in this zone is approximately 150 persons per square mile. The rest of the people live in the interior which comprises about 96 percent of the whole country. Of the total population over 148,450 live in Georgetown and the environs, 14,000 in New Amsterdam, and about 340,000 in the rest of the coastal area.

The population has been increasing at a rate of 3 percent per year since malaria was eradicated about 15 years ago, and now is estimated to be increasing at 4 percent (most rapidly among the East Indians). It comprises several different races. The most recent estimate available showed: 48 percent East Indians, 46-percent Negroes, pure and mixed, 3-percent Amerindians, 2-percent Europeans, and 1-percent Chinese. The East Indians live mainly in rural areas working on sugar plantations or engaging in rice cultivation. The Negroes live chiefly in the cities and work in manufacturing and mining industries and in the Government. The Amerindians, the only indigenous people, live in the forests, savannas, and on the fringes of some coastal areas. They work mainly in gold and diamond mining, cutting lumber, and collecting balata and other agricultural operations. The Amerindians are so called to distinguish them from the descendants of the East Indians who came originally from India to work on the plantations.

In 1960 more than 50 percent of the working population was engaged in agriculture compared with 42 percent, or 61,000 persons, in 1946 (not including 6,000 in forestry, fishing, and hunting). There were 50,000 to 80,000 in 1960 engaged in growing rice alone. However, the number of wage earners in rice is small because most of the 27,000 rice farmers employ members of their families to meet their labor requirements. The sugar industry which employs about 26,000 persons, almost half the number of those in rice, is the largest source of wage income. The bauxite industry, although not a large employer, accounts for almost a fourth of the exports. Because of the small size of most farms, there is a good deal of underemployment and many farm operators seek employment elsewhere, generally as laborers on sugar estates or large rice farms. An estimated 20 percent of the working force is unemployed and is highest in Georgetown, New Amsterdam, and the environs of these cities.

INSTITUTIONAL CHARACTERISTICS

Land Use

Less than 1 percent of the total land area of the country is under cultivation (table 1). This cultivated area is largely confined to a narrow coastal belt which is part of the coastal plain that embraces 3,839,000 acres. About 1 million acres of this plain are estimated as suitable for agriculture but only about 330,000 acres are presently in crops.

The coastal belt, where agriculture is concentrated, lies between the Essequibo and Courantyne Rivers and extends inland for about 10 miles. While a few estates in this zone have been abandoned because of poor drainage, soil depletion, or other reasons, new lands further inland have been brought under cultivation.

Table 1.--Major land uses, British Guiana, 1952

Land use	Area	Percentage of total area
	1,000 acres	Percent
Cropland:		
Sugar	80.8	--
Rice	1/ 134.0	--
Other crops	68.0	--
Total cropland	282.8	0.5
Meadow and pastureland	1,466.6	2.8
Savannas	5,261.6	9.9
Forests:		
On cultivable land	1,200.0	--
On other soils	39,723.6	--
Total forest	40,923.6	77.0
Waterways	4,400.0	8.3
Bush and waste	707.2	1.3
House lots and built-on areas	78.2	.2
Total area	53,120.0	100.0

1/ This rice acreage harvested in October 1952, together with the acreage harvested in Spring 1953, is shown in table 5 for the crop year October 1952 to September 1953.

Source: Agriculture in British Guiana, Census 1952. Department of Agriculture, Georgetown, British Guiana.

About 50 percent of the cropland was in rice in 1952, 29 percent in sugar, and the remainder mostly in coconuts, coffee, cacao, and feed crops. The land in crops increased from 282,800 acres in 1952 to an estimated 390,000 acres in 1960, or 39 percent. This increase was due chiefly to more extensive sugar and rice plantings.

Meadow and pastureland in 1952 occupied about 3 percent of the total land area and occurred largely on the coastlands. But the cropland increase has been reducing the land available for grazing, which in turn reduces the number of cattle in the area. The pasturelands near the river mouths are poorly drained and improving the quality of the grasses is rarely attempted. Over 5 million acres of savannas covering 10 percent of the country offer rough grazing land, but the mineral deficiencies in the soil make the grasses of poor quality as a feed.

About 77 percent of the country was in forests in 1952, of which only a small part is known to be good agricultural land. The forests yield over $2 million annually in exports of timber, chiefly Greenheart and Wallaba, also balata (rubber), firewood, and charcoal. Waterways occupy about 8 percent of the total area with the greater part (4.2 million acres) occurring in the forests.

The bush and wasteland, which is estimated at 1.3 percent of the total area of the country, includes swamps. About half of this land is privately owned and in the coastal zone.

Size and Tenure of Farms

There are over 28,000 farms in British Guiana. Of these, 75 percent are under 10 acres in size, 16 percent 10 to 25 acres, 6 percent 25 to 100 acres and 2 percent over 100 acres (table 2). All the farms together occupy three-fourths of the cultivated land, while the remaining one-fourth is occupied by the sugar estates, 14 in all, which vary in size from 934 to 13,000 acres.

Table 2.-- Distribution of farms by size and percentage of all farms, British Guiana, 1952

Size of farm	Number of farms	Percentage of all farms
	Farms	Percent
0.1 to 1.9 acres	6,351	22.5
2 to 4.9 acres	8,492	30.2
5 to 9.9 acres	6,772	24.0
10 to 24.9 acres	4,404	15.6
25 to 49.9 acres	1,022	3.6
50 to 99.9 acres	594	2.1
100 acres and over	552	2.0
Total	28,187	100.0

Source: Agriculture in British Guiana, Census 1952. Department of Agriculture Georgetown, British Guiana.

The Government is the great landholder. Sale of Crown lands has been restricted since 1938, and only about 1.4 percent of the total area of the country is held under freehold titles. These freehold lands occupy about a fifth of the coastal alluvial belt, including the riverine areas.

Government agricultural lands are leased. Leases formerly were for terms from 5 to 99 years but now are limited to 21 years and, as before, are renewable. Leases and permits are also granted for grazing, forest exploitation, balata extraction, and other purposes, such as collecting gums and plants. About 7,000 acres are held in lease by the U. S. Government, and about 4 million acres in the interior have been given to the Amerindian Reservation.

All leases, licenses, and permits to occupy Crown or Colony lands are granted on conditions according to Crown Land Regulations and may be repossessed upon failure to comply with the regulations. Their purpose is to encourage beneficial occupation, secure proper title for each plot of land, and do away with excessive fragmentation of the land.

Leased land may only be subleased with government approval, but freehold land may be leased for any legal purpose except rice cultivation, which lease is controlled by law. Land is given to each settlement scheme to be held in common for grazing purposes.

Land Development

Land settlement projects have been operated by the Government since 1945 and abandoned sugar and other estates have been acquired from time to time for this purpose. A separate Department of Land Development was established in 1954 and given responsibility for all existing land settlements and for the development of new ones. In 1956 an Advisory Committee was appointed to make recommendations to the Government on matters of policy connected with land settlement.

Besides clearing the land, repairing drainage and irrigation works, laying out the land in house and cultivation lots, and leasing it on easy terms to tenants, the Government provides technical advice on farming and cultivation. It also supplies other services including the operation of a machinery hire pool. This latter service is being gradually withdrawn, however, and settlers are being encouraged to form cooperative societies to hire or to purchase ploughing and reaping equipment.

In addition to about 10 land settlement projects in operation, there are several which have been planned for some time, or are actually under construction and will be completed under the 1960-64 plan. These projects will make more cultivable land available to small farmers and may encourage production of suitable crops.

The following are the most recent land settlement projects: (a) the Black Bush Polder, located near the Courantyne River, comprises about 27,000 acres divided into plots 17-1/2 acres in size intended mostly for rice production. Almost 3,300 applications for these plots were received by January 30, 1960, the closing date for the receipt of applications, and by the end of that year about a seventh of the land was allotted. (b) The Boerasirie, located on the east bank of the Essequibo River, consists of 25,500 acres. It is intended that all settlers, many already selected, will get 25 acres of land each. (c) The Garden of Eden, located on the east bank of the Demerara River, 13 miles from Georgetown, comprises about 1,200 acres. This area is divided into 24 plots of 25 acres each and 54 plots of 7.5 acres each. All selected are in possession of the land. According to plans, the 25-acre plots, which consist mostly of peat soils, are to be used for grass and dairying; and the 7.5-acre plots of clay soils will have citrus as the major crop. (d) Mara, located on the Berbice River, about 26 miles from New Amsterdam, consists of about 3,870 acres. This area is to be put into rice, cacao, and citrus. Each settler has been allotted 17-1/2 acres , of which 2-1/2 acres are for farmsteads and kitchen gardens.

The projects, which have been costly to establish and difficult to manage because of a shortage of trained personnel, have to date usually operated at a loss. It has cost the Government up to $470 per acre to prepare these lands. In addition to the original cost of drainage and irrigation, there are heavy annually recurrent maintenance and servicing charges. Because of the excessive cost involved, the Government plans to abandon this comprehensive type of settlement program in its future development project, and to depend instead on farm cooperatives to carry out development after the main drainage and irrigation work has been completed.

There are economic and financial problems connected with some established land settlement projects such as Mara. Apparently the farmers did not carry out the recommended practices, which include plowing twice before planting for higher yields, planting a "catch crop" such as black-eye peas or possibly even corn in between rice crops, and using fertilizers. After a careful study of the situation, the principal recommendations were: to appoint experienced extension representatives to give advice and assistance to the farmers on technical farm problems; to give leadership assistance in working out their social problems; and to assist the Government in inforcing the regulations requiring the farmers to work their farmstead plots as efficiently as they are required to work their rice lands.

Production Practices

As previously mentioned, before the land can be farmed it must be drained and canals built for irrigation. As small farmers are unable to bear these costs, the Government has undertaken this work. In addition, the land is cleared by tractors and surveyed to determine what crops can best grow on it, after which the land is leased to farmers.

The rice farmers use the age-old method of cultivation and, as a rule, grow one crop of rice. The rice fields on clay soils generally retain their natural fertility with exceptions of double-cropping. Some farmers are learning from demonstrations that higher yields are obtainable from the use of fertilizers. In recent years small farmers have increased their use of tractors and are now using these in ploughing instead of oxen (fig. 1). Harvesting and threshing are now done by combines which are either rented from a government machinery pool or purchased cooperatively. The Government is taking steps to

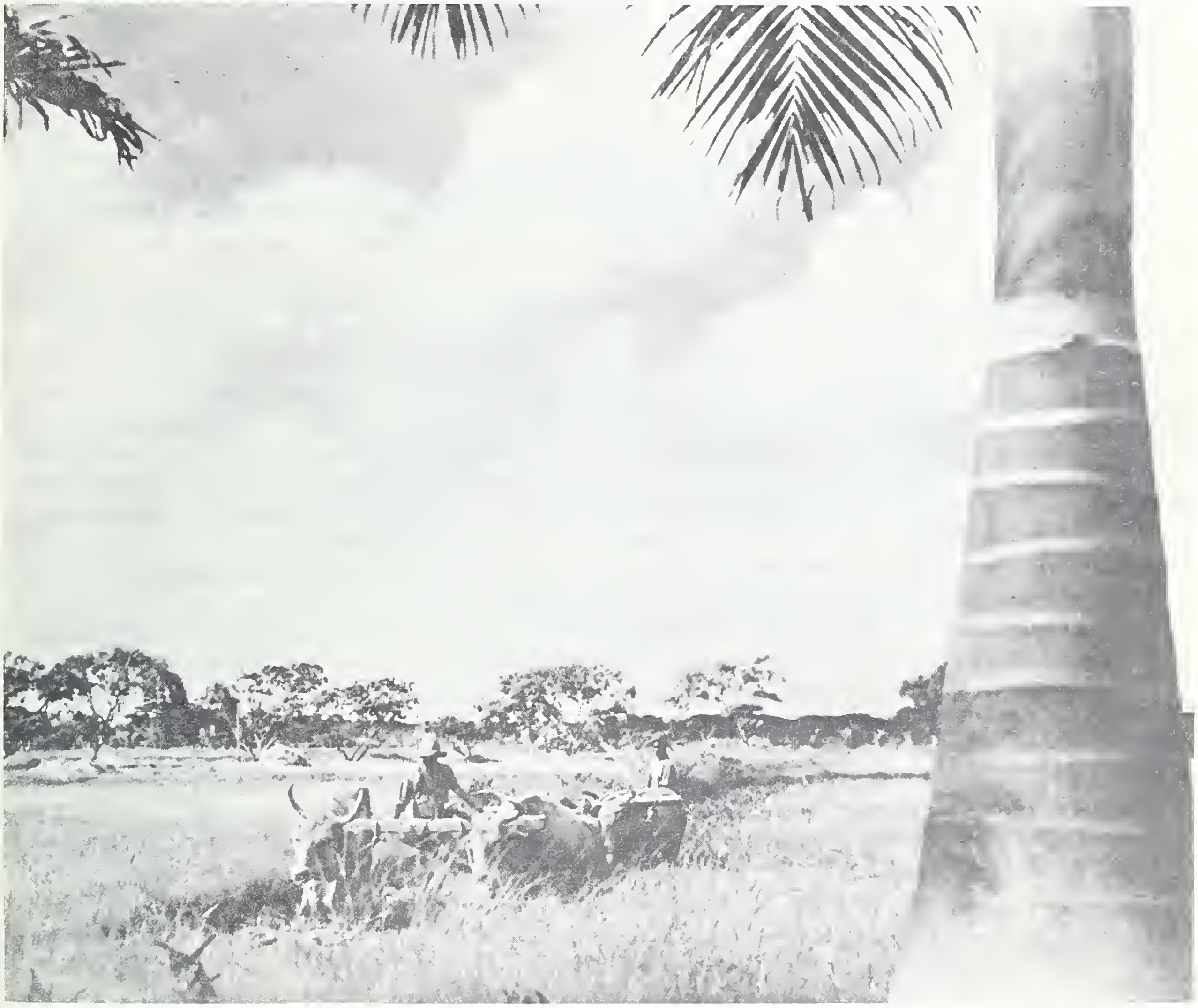

Figure 1.--Plough teams at work in a rice field on the coastal belt of British Guiana. Courtesy of British Information Services.

see that more machinery for the rice industry is made available for sale or rent at moderate prices. The upward trend in mechanization is indicated by imports in 1960 of 800 tractors and 130 combines as compared with 400 tractors and 20 combines in 1959.

Lands in sugarcane are cultivated intensively by the estates, and soil fertility is maintained by the use of mineral fertilizers and the practice of periodic flood-fallowing. The estates also service the land they rent to small farmers for growing sugarcane. The high costs involved in the maintenance of drainage and irrigation canals on estate land are offset by highly efficient and economic production methods which require all operations to be mechanized, modernized, and centralized, as much as possible.

Agricultural Policies

Agricultural associations, cooperating on a regional basis and aided by the local government, have obtained a protected market or support schemes for their principal products. Trade policies are also directed towards the protection of local agricultural products.

The principal declared agricultural objectives of the Government are (1) to improve, through research, the existing crops and livestock, and to discover new varieties of crops and new breeds of livestock adaptable to the country; (2) to provide educational and extension facilities for farmers to enable them to use improved techniques and practices; (3) to organize and rationalize production, marketing, and processing, particularly on cooperative lines; (4) to make available for production use, particularly to the unemployed and underemployed, after soil surveys, increasing areas of land from the large undeveloped land resources of the country; and (5) to facilitate efficient production, marketing, and processing through the assistance of such agencies as the Credit Corporation, Producers' Association, and Marketing Boards. It is expected that this policy will result in increased exports of crops and livestock products, the diversification of agriculture, and the reduction of food imports generally, by the increased production of fruits, green vegetables, and root crops.

The 1960-64 Development Program does not differ significantly from the previous 5-year program of 1956-60 except to place greater emphasis on income-generating projects. This action is in keeping with the principal recommendation of the economic survey mission sent by the World Bank to British Guiana in 1953 and again in 1958 at the latter's request.

More than half of the $64.8 million authorized for the 1960-64 program has been earmarked for agriculture and agricultural credits. The $28.7 million for agriculture includes sea defenses (dikes and sea walls), irrigation, and land development; and $5.3 million was allotted for agricultural credits. The breakdown of total planned expenditures is as follows:

Type of project	Million dollars	Percentage of planned expenditures
Agriculture (including sea defenses, irrigation, and land development)	28.7	44.3
Agricultural credits	5.3	8.2
Highway construction	8.5	13.1
Shipping and harbors	3.8	5.9
Civil aviation	1.0	1.5
Railroads	1.2	1.9
Industrial credits	2.3	3.6
Forestry	.3	.5
Surveys (geological, topographical, & aerial)	2.8	4.2
Public buildings	.8	1.2
Education	2.4	3.7
Housing	2.9	4.5
Other social services (health, water supply, social welfare, and miscellaneous)	4.8	7.4
Total 5-year program	64.8	100.0

The program is to be financed by about one-third from United Kingdom grants and local revenues and two-thirds from loans. Grants from the Commonwealth Development and Welfare Fund are expected to amount to $13.6 million. Other funds are to be obtained from the local budget, the sale of local debentures, and foreign loans. This latter has been made less attractive by the changing political climate.

The 1962 development plan expenditures, originally projected at $18.5 million, have been reduced to $11.7 million.

The 1956-60 plan stressed the social services, but the main objectives of the 1960-64 plan are to increase rice acreage, to make more lands available for cattle, and to relieve the country's dependence on rice and sugar by accelerating its crop diversification program with emphasis on cacao and coconut plantings.

Agricultural Credit

The British Guiana Credit Corporation, a semiautonomous government agency, was established in June 1954 in order to promote economic development by providing financial credits and stimulating local investment. It replaced existing cooperative credit banks and coordinated the credit activities of the numerous small thrift and credit societies.

The greater part of the Corporation's loans have been made to cooperatives for agriculture, housing, and food production. To increase its lending ability, a loan of $1.25 million was obtained in June 1961 from the International Bank for Reconstruction and Development.

In making loans the Credit Corporation has been guided largely by the advice of Regional Development Committees in each of the nine administrative districts of the country. The Corporation has continued to make advances to farmers on two projects--the Garden of Eden and Mara.

Recently the Department of Agriculture has undertaken to plan and supervise loan applications for short-term bonus crops, such as cabbage, and some applications have been submitted to the Credit Corporation. But the Department still does not consider agricultural credit of sufficient importance to assign enough men to carry out the field work properly. Consequently, when there is only one man in an area, work comes to a standstill if he should leave.

Education, Research, and Extension

Compulsory education in British Guiana applies to all children between the ages of 6 and 14. Though schools are seriously overcrowded and entrance to secondary schools is limited, educational standards are relatively good, and the literacy rate is over 80 percent.

The curriculum of the primary schools in recent years has put greater emphasis on practical work such as agriculture and domestic science. The Government Technical Institute, established in 1951, enrolls over 1,500 students. Although there is no center of higher education in British Guiana, the country benefits from association with a number of regional organizations such as the University College of the West Indies, Faculty of Agriculture, the Imperial College of Tropical Agriculture, the Eastern Caribbean Farm Institute, and the Regional Research Center. Also, collaboration in agricultural planning and research is assured through the Regional Natural Resources Council and its Committees on which British Guiana is represented.

The Government maintains four agricultural research stations throughout the region, namely, the Central Agricultural Station at Mon Repos on the east coast in Demerara, the Ebini Livestock Station in Berbice, St. Ignatius Livestock Station in the Rupununi, and the Hosororo Experiment Station in the northwest of Essequibo. Each station works chiefly on the agricultural problems of its particular area.

There are two separate research organizations concerned with the principal export crops, sugar and rice: the Sugar Experiment Station and the Mahaicony rice station. The former is maintained by the Sugar Producers' Association and serves the sugar industry by conducting varietal, fertilization, and cultivation tests. The Mahaicony Rice Station seeks improved varieties. Research on sugarcane is also carried on by the sugar companies. Moreover, British Guiana is a full contributing member of the B.W.I. Central Sugar Cane Breeding Station in Barbados.

The Extension Service is reaching many farm people through Rural Youth and Home Demonstration projects and is receiving assistance from the U.S. AID Mission in training lay-leaders in these and other projects and in giving demonstrations in vocational agriculture. In 1960, 42 field assistants were in Extension work, but this number does not seem adequate to enable the men to meet the steadily increasing demand from farmers for advisory service.

Technical Assistance

British Guiana has received technical assistance from many sources. The country has been studied and surveyed by British, American, international, and regional organizations who have advised and worked with the local government, either directly or through the Caribbean Organization (formerly the Caribbean Commission), to improve the economic status of the area. How much of these early findings have been used beneficially remains a moot question.

The United Kingdom has sent experts on a wide range of matters, including cooperative development, housing, and social welfare. The U.K. Colonial Development Corporation has been active in the territory and has been concerned with rice growing and milling, timber extraction and saw milling, hydroelectric development and gold mining. These projects were planned and carried out with special regard to the interests of the people of the country.

The United States through its Agency for International Development (AID) has sent specialists in land and soil surveying, geology, engineering, marketing, public health and community development to the territory to carry out surveys and conduct courses of instruction. U. S. technicians have worked in an advisory capacity with the British Guiana Department of Agriculture in livestock, marketing, crops, and other fields. The United Nations has awarded scholarships for the study of public administration and social welfare, and the World Health Organization has sent experts to prepare and to assist in carrying out health campaigns.

Cooperatives

The cooperative movement has progressed rapidly in British Guiana in recent years. In 1959, Dr. Cheddi Jagan, the Prime Minister, considered it a mid-point between capitalism and socialism and "something to be cherished and developed." There are 550 cooperatives, most of which are thrift and credit societies organized for the purpose of getting short-and medium-term agricultural credit. During 1959, these societies also obtained $230,000 from the Credit Corporation to finance farm machinery purchases.

Some cooperative societies actually farm land or buy machinery together. There are 24 land cooperatives with a membership of 1,827 farming some 15,000 acres and reported as making good progress in 1959.

Many of the cooperative societies in British Guiana are affiliated with one of two central organizations: the British Guiana Cooperative Union Ltd. and the British Guiana Cooperative League Limited. The former promotes cooperative Education and the latter assists in the formation of credit unions.

Marketing and Transportation

Some small private markets and supermarkets exist which seem very well managed, but the old festival type of public market still exists. In the public markets, small merchants in crowded quarters along with vendors sitting in the street, sell small quantities of produce under unsanitary conditions, and barely make a living. This outmoded system of marketing is responsible for the absence of progress in the production and distribution of farm production.

In order to assist small farmers the Government's Marketing Division offers a guaranteed low price for most of the food crops, and a correspondingly low price is realized since the market for these commodities is limited and the quality poor. The Division has six subpurchasing agencies (five for Georgetown and one for New Amsterdam) and two produce depots and organizes the distribution of supplies to consumers.

Two active farmers' cooperatives, like the small farmers, sell their produce through the huckster. However, the cooperatives have recently been trained to grade and properly pack their produce and to sell directly to the retail trade, thus eliminating the huckster or middleman. In marketing milk, the lack of facilities to cool the milk at the source of production and delay in getting the warm milk to the pasteurization plant in Georgetown result in spoilage and large financial losses.

Marketing specialists made several recommendations for modernizing the marketing system including the training of personnel to grade commodities. A grading manual published in 1961 by the Director of Agriculture has been invaluable in this training. Also, legal standards have been established for citrus, sweetpotatoes, coffee, cacao, and avocados; it is expected that eventually standards will be established for all commodities.

Lack of adequate transportation is a major impediment to efficient marketing and to the development of the country. Commodities are transported throughout the country by horse-and donkey-drawn carts, motor trucks, river boats, railroads, and aircraft. Roads are congested, water transportation is slow, and as the boats lack proper storage space and refrigeration, this results in delay and possible spoilage (fig. 2).

Only 305 miles of highways are along the coast and 58 miles of branch roads to settlements. Traffic is ferried across the three main rivers. About 10 miles of road have a hard surface and, for economic reasons, the remainder made with burnt clay. A dirt road extends from Bartica 118 miles to the old Mahdia gold fields inland. In addition there are about 400 miles of trails in the interior. According to reports, the Government has awarded a contract to build a road from Parika on the coast to Bartica. As the coastal road and railway end at Parika, this 36 1/2-mile road, expected to be completed within 2 years, will give Bartica access by land to the eastern coast. A survey is also being made to determine the best route for a road from the coast to Lethem, an interior town on the southwestern border.

There are 80 miles of a narrow gauge railway line between towns on the coast and 99 miles of company-owned railways to the bauxite mines.

Access to the interior from the coast is mainly by river and air transport using amphibian aircraft. An international airport at Atkinson Field is 26 miles from Georgetown, also 21 airfields are scattered in the interior

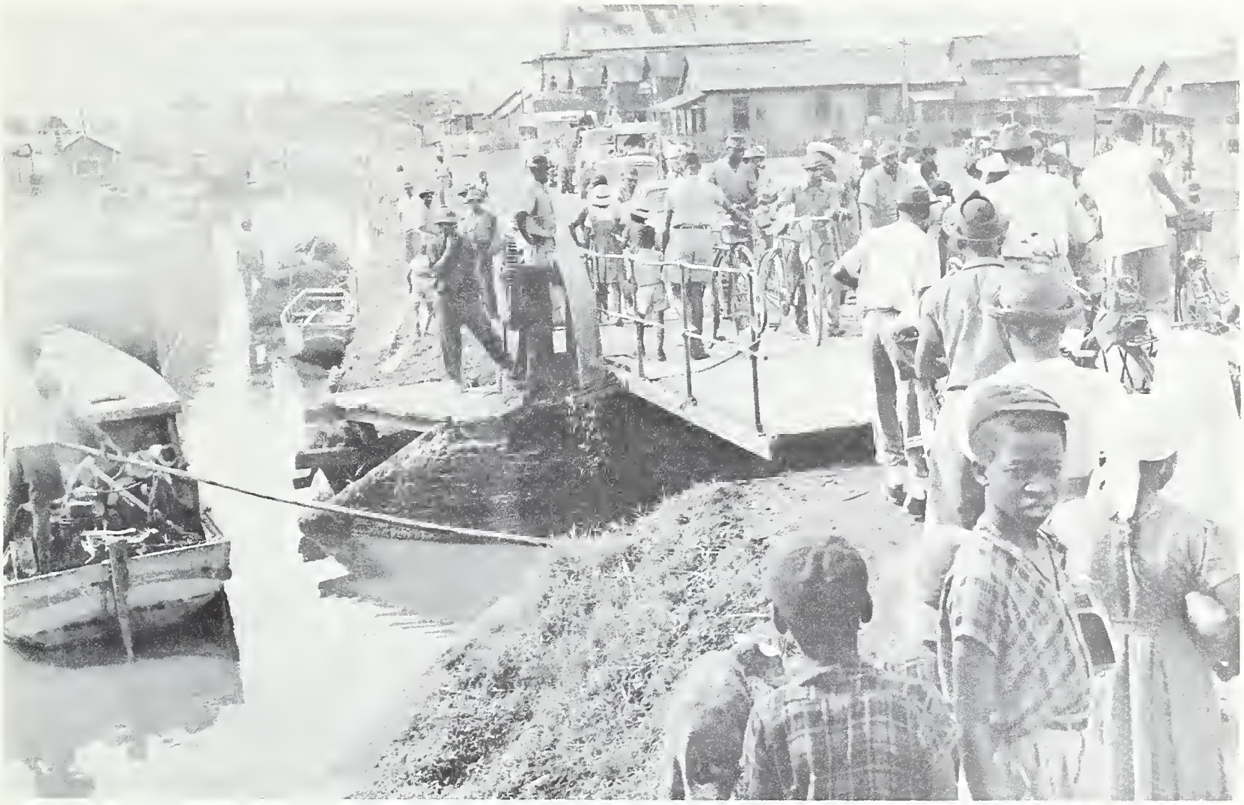

Figure 2.--A typical scene of water transportation. A drawbridge on the main Atkinson airfield road to Georgetown road. The road is closed when the bridge is raised for canal traffic.

and 53 water-alighting areas. The British Guiana Airways Company is government owned but operated by the British West Indian Airways.

Besides the main ports of Georgetown and New Amsterdam, a small port is located at Springlands on the Courantyne River.

AGRICULTURAL PRODUCTION

The agricultural industry of British Guiana is by far the most important activity and accounted for 42 percent of the GNP of $150 million in 1960. lesser contributors of importance being bauxite and other minerals. Agriculture is expected to maintain its relative importance in the economy; and shift in its position will depend on the establishment and progress of new industries, but this is not foreseen in the immediate future. With this GNP, the average per capita income amounted to about $250 which is similar to that of most Latin American countries.

British Guiana has two major agricultural crops, sugarcane and rice (table 3). Sugarcane, the largest money earner, occupied less than a third of the total harvested area in 1960, while rice, a low money earner, occupied over half. But rice production provides employment for about twice as many persons as does sugar.

Table 3.--Principal crops: Area and production, British Guiana, 1952 and 1960 1/

Crop	1952 Harvested area	1952 Production	1960 Harvested area	1960 Production
	1,000 acres	1,000 short tons	1,000 acres	1,000 short tons
Sugar	73.9	271.8	98.1	374.6
Rice (milled)	2/ 114.4	74.7	2/ 204.0	125.9
Coconuts (copra)	3/ 31.5	4/ 6.6	3/ 35.3	4/ 6.3
Coffee	4.2	.4	2.8	.4
Cacao	1.2	.054	1.7	5/ .015
Provisions 6/	21.4	30.0	7/ 21.4	8/
Corn	1.6	.9	1.6	5/ .8
Fruit, including citrus	8.0	6.1	8.0	
Other	1.8		1.8	
Total	258.0		374.7	

1/ Crop year ending September 30. 2/ Includes area in second rice crop. 3/ Includes area in scattered plantings. 4/ Copra. 5/ Purchases by the Government Marketing Division in Georgetown. 6/ Includes plantains, cassava, sweetpotatoes, tannias, eddoes and yams. 7/ Estimated. 8/ Not available.

Other crops of lesser importance include coconuts, coffee, and cacao. An increase in acreage of these crops is a major feature of the 5-year plan. Food crops grown entirely for domestic use include plantains, cassava, root vegetables, corn, citrus,and other fruit. The Government has offered numerous incentives to grow varied crops but has met with little success, particularly in the face of the growing rice profits.

Livestock production is to be found chiefly in the coastland pastures and the Rupununi savannas. In the coastal zone the rice farmers usually have a few cattle, pigs, and poultry.

Export Crops

Sugarcane--This crop accounts for half the value of all the country's exports and is grown in the coastal area of the districts of Demerara and Berbice.

Total area of cane harvested in 1961 was 106,000 acres, or 8 percent higher than the previous year (table 4). Most of the acreage was cultivated by estates and less than 7 percent by small farmers. The estates, 14 in all, are controlled by two companies--the larger company produces about 80 percent of the sugar, and the smaller one produces most of the remainder. Farmers, who sell to the nearest sugar mill, account for less than 2 percent of the sugar produced annually.

Table 4.--Sugarcane: Acreage harvested, production and net exports of raw sugar, and quantity available for domestic consumption, British Guiana, 1950-61

Year	Acreage harvested	Production	Net exports	Available for domestic consumption 1/
	1,000 acres	1,000 short tons	1,000 short tons	1,000 short tons
1950. . .	67	221.8	194.1	27.7
1951. . .	69	237.4	201.9	35.5
1952. . .	74	271.8	262.3	9.5
1953. . .	73	269.0	237.2	31.8
1954. . .	80	267.6	273.2	2/-5.6
1955. . .	78	280.1	271.6	8.5
1956. . .	76	294.9	275.4	19.5
1957. . .	83	319.2	286.2	33.0
1958. . .	87	343.1	336.4	6.7
1959. . .	89	318.6	285.8	32.8
1960. . .	98	374.6	346.1	28.5
1961. . .	106	363.7	350.8	12.9

1/ No adjustment for changes in stocks. 2/ Available from stocks.

Source: Annual Reports, Director of Agriculture, Georgetown, British Guiana. Annual Accounts Relating to External Trade. Department of Customs and Excise, Georgetown, British Guiana.

Sugarcane cultivation in British Guiana is more costly than in almost any other place in the West Indies, chiefly because of soil deficiencies and the need to maintain a system of drainage and irrigation. Profits are low. To make a profit at all requires a skillful combination of technology and efficient factory production.

Growing cane by a large number of independent small farmers is virtually out of the question because of production costs and the need to transport all cane to the mills by water. However, the large sugar company started a pilot scheme to lease cane lands to small farmers, for whom it performs certain services and from whom it buys cane at agreed prices.

The sugar industry has been expanding during the last 11 years; 1961 output is 64 percent higher than in 1950. This expansion has been encouraged by an assured market in the United Kingdom and still further by long-term arrangements, extended to 1969, under the Commonwealth Sugar Agreement whereby a quota, at a price negotiated annually, is allotted to British Guiana out of a total quota to the British West Indies and British Guiana. The United Kingdom guaranteed-price purchases amount to over half of British Guiana's exports. Out of the remaining portion a fixed quantity is sold to the United States at a preferential price; the rest can be offered for sale at the world price, either in the United Kingdom and Canadian markets with the advantage of preferential tariffs, or in world markets.

Up to the summer of 1962 British Guiana had a standing U.S. quota of 84 tons, in addition to which it received non-quota allocations from the United States. But under the new U.S. Sugar Act as amended in July 1962, British Guiana received a much higher quota (14,560 tons for 1962) which is derived from a quota of 90,235 tons allocated to the British West Indies and British Guiana for the period 1961-62.

The record production of 374,000 tons of sugar in 1960 was made possible, in part, by near perfect weather which permitted a high yield of 3.82 tons of sugar per acre, and in part by the foresight of the country's two large sugar producers who anticipated a good export market and planted an extra 9,000 acres. Despite the larger acreage in 1961, the lower yield per acre caused by unusually dry weather prevented an increase in total output, and the production of 363,700 tons was 3 percent lower than 1960. No increase is expected in 1962 as indicated by production in the first half of the year. About 23,000 tons of sugar are used for domestic consumption.

Because of the two wet and two dry seasons occurring annually, planting and reaping can be more continuous than where there is only one wet and one dry season. The sugar crop year coincides with the calendar year and two harvests are ordinarily reaped during the period, namely, the spring crop which lasts from January to June and the autumn crop from July to December. The cane is harvested about a year after planting and the root clumps are allowed to grow again for another year before the next cutting. Before harvesting, the cane fields are set on fire for a dual purpose--to save labor by burning the leaves and to remove the snakes.

British Guiana has eight sugar mills which are controlled by the large sugar company. Towards the end of 1960 this company completed and put into operation a bulk storage and loading plant for sugar with a capacity of almost 45,000 tons.

Sugar exports amounted to 346,100 tons in 1960, and 350,800 tons in 1961. Over half of the sugar goes to the United Kingdom, and the rest to Canada and the United States. In 1961 the United Kingdom paid $112.75 a ton; a relatively higher price was paid under the U.S. sugar quota agreement, which greatly helped to preserve an adequate sugar market for the 1961 crop.

Rum and molasses, two important by-products of sugar, are important money-earners. In 1960, exports of these products amounted to $1.8 million and $1.6 million, respectively. The bulk of the rum goes to the United Kingdom and the inedible molasses chiefly to Canada, Trinidad, the United Kingdom, and the United States, in order of importance.

A fee of 2.63 cents for every ton of sugar exported is put in the Sugar Industry Labor Welfare Fund. This money is used to build rural housing, roads, and community centers. Early in 1961 the Sugar Industry initiated the first Health Insurance Program for sugar workers in the Caribbean.

Rice--Acreage planted to rice, the country's second most important crop, is double that of sugarcane. Cultivation extends almost continuously throughout the frontlands of the coastal belt. The crop is well suited to the heavy clay soils of this area.

Rice is grown mainly by small farmers of East Indian origin, many of whom were former sugar workers. The average holding is about 7 acres though some farmers, using machinery, cultivate as much as 440 acres.

British Guiana became the chief source of rice for the Caribbean Islands during World War II. To meet this demand, production was increased substantially. Now the area is expanding rapidly under government sponsorship. Since 1958 it has increased at the rate of 15,000 to 20,000 acres per year and reached 204,000 acres in 1960 (table 5). This includes the main crop of 179,000 acres and 25,000 acres planted to a second rice crop. In 1961 the total area reaped was 230,000 acres.

Table 5.--Rice, milled: Acreage, production, net exports, and quantity available for domestic consumption, British Guiana, 1950-61

Year 1/	Acreage harvested	Production	Net exports 2/	Available for domestic consumption 3/
	1,000 acres	1,000 short tons	1,000 short tons	1,000 short tons
1950. . .	96	72.5	32.7	39.9
1951. . .	114	74.4	33.7	40.7
1952. . .	114	74.7	31.0	43.7
1953. . .	154	85.2	44.5	40.7
1954. . .	130	89.5	41.1	48.4
1955. . .	147	97.2	59.7	37.5
1956. . .	144	85.6	46.3	39.3
1957. . .	134	87.7	42.7	45.0
1958. . .	165	76.5	19.8	56.7
1959. . .	183	100.5	55.9	44.6
1960. . .	204	125.9	70.8	55.1
1961. . .	230	136.3	101.0	35.3

1/ Crop year ending September 30. 2/ Calendar year. 3/ No adjustment for changes in stocks.

Source: Annual Reports, Director of Agriculture, Georgetown, British Guiana. Report of the British Guiana Marketing Board, October 1, 1959-September 30, 1960, Georgetown, British Guiana.
Annual Accounts Relating to External Trade. Department of Customs and Excise, Georgetown, British Guiana.

As a result of this rapid rise in acreage planted, production has established new records. The 1959-60 crop reached a high of 125,900 tons of milled rice and the 1960-61 crop of 136,300 tons was 8 percent higher. Over 39,000 tons of output is required for local consumption.

The quality and yield per acre in 1960 was better than in the previous year because of better cultivation practices and good weather. Paddy yields in British Guiana compare favorably with those of Asian countries generally, British Guiana averages about 2,000 pounds per acre compared with Asian averages of 1,200 to 1,500 pounds.

Rice is planted either by broadcasting or by transplanting higher yielding seedlings from small nurseries. The autumn or main crop is planted at the beginning of the long wet season, April-May, and is harvested in October. In some areas a second crop is planted in November-December to mature in the spring. Occasionally rice grows with little care from the seeds dropped during the previous harvest; this crop is called "lameira."

The rice variety most widely grown is No. 79, a good yielder though D 110, the drought-resisting variety, is popular in some areas. Pure rice seed is distributed to growers by the agricultural department mainly through cooperative credit societies. The Director of Agriculture and the Rice Marketing Board, an official organization, have begun a joint campaign to eradicate "red rice " present throughout the country. Red rice is a collective name for weed types of rice whose presence in paddy (rough rice) lowers the quality as it requires harder milling than the good varieties. This in turn leads to greater wastage in the bran and to a higher percentage of broken grains. Insects and diseases can be readily controlled and are not important economically.

In the Mahaicony-Abary area the British Guiana Rice Development Company, a semiofficial organization, is operating a project for the large scale mechanical cultivation of rice. There are about 2,400 acres of rice under cultivation. The company also operates two modern rice mills, one at Mahaicony with an annual capacity of 20,160 tons and the second at Anna Regina on the Essequibo Coast, which opened in 1956, with a capacity of 14,100 tons of rice.

Paddy is milled in districts where produced. There are over 200 small, privately owned mills operating in these districts. Most of them are inefficient. The Government proposed to close many of these mills and direct the paddy to the modern mills operated by the Rice Development Company. By doing so the Government hoped to centralize rice milling for more efficient production. But mill owners and rice farmers objected, and because of their political importance to the party in power, the plan was abandoned. Instead, mill owners have been given 3 years in which to modernize. Low interest loans are available for this purpose from the British Guiana Credit Corporation.

Exports of milled rice in 1961 totaled 101,000 tons, 42 percent more than the high of 1960. There is every indication that the 1962 exports will be higher. Almost all the rice is exported to the West Indies--Jamaica, Trinidad, Barbados, and the Windward and Leeward Islands--under agreement. But the steady rise in production created the problem of finding new markets for the surplus rice, and Cuba entered the buying market in 1961 under favorable terms for British Guiana. Cuba agreed to buy 22,400 tons of rice in 1961 and 40,320 tons annually during the next 5 years. Its 1961 purchases, however, amounted to 33,152 tons, which not only absorbed the surplus production but made it necessary for British Guiana to buy high quality rice from the southern United States to meet commitments to other countries. However, Cuba's political and economic situation make it an uncertain market for British Guiana's rice. Furthermore, the increasing acreage under cultivation plus the increasing yield per acre are going to make the acquisition of a firm market of prime importance.

Under the agreement between British Guiana and the various West Indian islands, the British Guiana Rice Marketing Board supplies rice to these territories at fixed prices, and the purchasing governments agreed to buy all their rice from British Guiana. Contracts and prices are confirmed periodically.

The Rice Marketing Board has sole responsibility for exporting all rice and arranging contracts for the sale of rice overseas, heretofore primarily to the West Indies. Currently, there is a shortage of storage facilities, but the Board has been authorized to build a new warehouse.

Rice producers believe that their marketing problems are solved and their task now is to produce and to mill better grades of rice.

Coffee--Coffee, the most important minor crop exported, is produced on 3,000 acres. This is 29 percent less acreage than in 1952. Liberian coffee, *Coffea liberica*, the variety grown in British Guiana, is found mostly in the North West District and the Pomeroon River area in Essequibo County.

This small industry suffered a severe setback in 1960 when production dropped to 400 tons, or 20 percent lower than the previous year. There were two contributing factors: a price decline from 28 to 15 cents a pound, and extensive damage to coffee trees caused by an attack of *Sclerotium* disease. Spraying with fungicides proved ineffective in controlling this disease, but trees which were fertilized showed considerable resistance to it.

Most of the coffee is exported, going mainly to the Netherlands. In 1960 236 tons were exported. This was 12 percent lower than in 1959 and represented a loss in revenue of $27,000. Meanwhile imports of ground coffee and coffee extracts have increased. To offset this drop in exports and to support the local price of coffee, the Government raised the tariff on coffee imports. At the same time the Department of Agriculture took steps to improve the quality of Guianese coffee. However, higher tariffs failed to reduce imports appreciably or to improve the local sales of Guianese coffee, and farmers have shown little interest in the Department's crop improvement efforts. The tariff was raised again in February 1962, but the extent to which imports will be reduced will depend on the improvement in the quality of the local coffee.

As only about 4 percent of the coffee produced is consumed locally, the Marketing Department is trying to encourage its use. By improving the quality, the Department hopes to create an internal market that could absorb all the coffee produced at a price that would ensure a fair return to coffee growers. Thus the need to import coffee would be reduced.

In 1961 grades for coffee were established. This, together with special sizing screens for growers, resulted in the sale of the entire 1961 coffee crop at competitive world prices.

Cacao--According to the 1952 census, about 1,150 acres of cacao were grown by over 200 farmers. In 1960 about 1,700 acres were reported in cacao of which 550 acres were planted by a large estate. This estate shares the Government's interest in finding other crops for the country, and its experimental plantings of cacao were very successful.

The revived interest in cacao was the result of (1) a rise in the world price of cacao, and (2) 5 years of research financed by the Colonial Development and Welfare Organization. Their report estimated that 50,000 acres--an area of fertile land along the river banks and protected hill slopes--were suitable for cacao cultivation. Especially encouraging was the finding that the Northwest District, one of the most depressed areas in the country, was found to be suitable for cacao. This part of the country is inhabited mainly by Amerindians.

British Guiana was a cacao producer when the early Dutch settlers grew the crop along the river banks. But the industry fell into a state of decay, mainly as a result of the outbreak of witches-broom disease and a fall in prices on the world market at that time.

The Government of British Guiana extended its program for the promotion of cacao cultivation to its new 5-year Development Plan in the hope that cacao would become a main crop on land settlements in the riverine areas. Clonal cuttings and high yielding hybrid seedlings were distributed to farmers at subsidized prices. Also, a bonus was offered to farmers for each acre planted to cacao. This was based on the realization that small farmers will not willingly grow a crop that takes from 5 to 7 years to harvest without being assured of some kind of financial assistance in the interim. As a result, many abandoned plantings were reclaimed and rehabilitated, and a small amount of cacao was produced.

As the Marketing Division guaranteed to purchase cacao beans from farmers, it bought about 8 tons in 1960, but the quality was unsatisfactory. In an effort to improve the quality of the bean, specific grades have been established, and cacao farmers are being instructed in proper fermenting and drying techniques.

Exports of cacao in 1960 amounted to almost 6 tons, 68 percent below the previous year. The entire shipment went to the United Kingdom. This represents a shift from its previous principal markets, the Netherlands and Surinam.

During the last 2 years growers' interest in cacao development has again declined because of falling prices. The Government has decided, therefore, to abandon the program of promoting cacao processing as a small farm operation in favor of establishing central fermentaries and dryers. This would encourage the production of high quality cacao similar to that of the West Indies and would qualify the crop for the premium price.

Citrus--The new citrus plantings established in 1960 totaled about 350 acres of oranges and grapefruit. In addition, a private company planted about 150 acres of limes.

Although British Guiana has favorable soil and climate for producing citrus fruit, it continues to be a net importer, buying large quantities of fresh oranges from Surinam and canned juices from Trinidad. To remedy this the Department of Agriculture pays subsidies for developing farmlands into citrus plantings and provides suitable planting materials at subsidized prices.

A program important to the citrus industry is the testing of citrus budwood and rootstocks for resistance to tristeza disease and tolerance to local soils. As the disease exists in neighboring countries, these measures would protect the industry from being in a vulnerable position, should the disease occur here.

Domestic Crops

Coconuts--In terms of area, the coconut is the third most important crop, covering an estimated 35,500 acres. Over 80 percent of the coconut estates are less than 10 acres, the remainder vary in size up to 1,000 acres. Scattered plantings, mostly in Berbice, equivalent to about 6,000 acres in all, are found along trenches and roadways, on house lots, and among food crops. The solid plantings of the estates predominate in Demerara and Essequibo. The coconut palm produces best on the coastal "sand reefs" but thrives on the coastal plain, also especially on well-drained areas.

Many coconut estates have suffered from low returns and high labor costs. For this reason, coconuts in British Guiana are considered to be best suited to small areas that can be handled by family labor. There were about 2,400 coconut growers in 1952.

Good weather in 1960 favored the growth of the palm and the preparation of copra. The yield was estimated at 44 million nuts which were used mostly to produce 6,300 tons of copra, 682,000 gallons of edible oil, and 63,000 gallons of crude oil (table 6). This copra output, larger than in the previous year, resulted in a higher production of edible oil, but output of crude oil dropped. The low output in 1959 resulted from 3 years of relatively dry weather and disease.

Edible oil is extracted from the copra locally by two large privately owned mills in Georgetown. Crude oil is processed as a cottage industry. In this process the fresh mature kernel of the nut is grated and boiled; the resulting crude oil is consumed at home or is sold, and the by-product is fed to pigs. This method is considered wasteful by the Agriculture Department.

Copra is the dried mature kernel of the coconut. In order to help small farmers improve the quality of their copra, a small locally produced dryer is being developed for their use.

The Commodity Control Organization controls copra grading and prices. The export price of copra and raw oil is fixed by the Regional Oils and Fats Conference of which British Guiana is a member. An Oils and Fats Agreement, renewed in 1959, between British Guiana and the British Caribbean Islands asserts that all coconut products--such as copra, fats, oils, and soaps--may not be exported or imported outside their territories except in case of

Table 6.--Coconut products: Production and net imports of copra, edible and crude oil, and total oil available for domestic consumption, British Guiana, 1955-60

Year	Production			Net imports 1/		Total oil available for domestic consumption 2/
	Copra	Edible oil	Crude oil	Edible oil	Crude oil	
	1,000 short tons	1,000 gallons	1,000 gallons	1,000 gallons	1,000 gallons	1,000 gallons
1955	6.8	778	241	3	---	1,022
1956	6.1	696	231	3/	---	919
1957	6.0	677	147	152	---	976
1958	5.4	624	110	246	18	998
1959	3.8	445	86	131	49	711
1960	6.3	682	63	5	58	808

1/ No imports or exports of copra.
2/ No adjustment for changes in stocks.
3/ 8,000 gallons were exported to the West Indies.

Note: Imperial gallons are used. One Imperial gallon equals 1 U.S. gallon.

Source: Annual Reports of the Department of Agriculture. British Guiana, 1957 and 1960.

surplus or shortage within the area covered by the agreement. Prohibited imports include other oils and fats which may compete commercially with the local product.

British Guiana imports both edible and crude oil from territories within the area to meet local demands. In order to make the country self-sufficient in coconut products, the Government introduced a plan to revive and develop the industry. The plan includes loans for estate rehabilitation, an annual increase of 2,000 acres of new area plantings, incentives for new plantings, and technical assistance to control pests and diseases and to increase yields by better field practices.

Principal pests of the coconut palm are the moth borer, a Castnia daedalus and the coconut caterpillar, Brassolis sophorie. The former is controlled by spraying, the latter by hand picking the caterpillars. Neither bud rot nor red-ring disease is widespread; bud rot is controlled by spraying, but there is no known control for red-ring.

The Department of Agriculture distributed about 60,000 seedlings to farmers in 1959 and about 135,000 in 1960. It hopes to maintain this level of distribution throughout the next 10 years, and thus restore British Guiana to self-sufficiency in edible oil.

Coir fiber, a by-product of the coconut industry, is extracted from the coconut husks. This product is exported or used in secondary and cottage industries. The Government provides technical training in the efficient processing of this fiber and buys family-produced coir yarn at guaranteed prices. It also supplies spinning wheels on credit.

Other Food Crops

A wide variety of food crops is grown in different geographical districts but mostly in small volume. There is little commercial production, and the quality is poor since not much has been done to improve it. In 1952 about 31,000 acres were in food crops and, judging from the increased output since then, it is reasonable to assume the acreage has also increased.

In the order of volume of production, plantains, cassava, and corn are the most important of these crops, followed by sweetpotatoes and other root crops, such as eddoes, yams, and tannias.

The only production figures available are the purchases made by the Government Marketing Division, which are supplies in excess of the personal needs of the private traders. The disposal of produce not exported or sold locally presents a problem to the Division because of the perishable nature and limited storage life of these items. Surplus plantains are dried in the government mill and sold as chips and flour. Surplus cassava is sold mainly to small producers of starch, and small amounts are sold to pig raisers at low prices. The guaranteed low price offered by the Marketing Division for most food crops may be considered a subsidy to low-income farmers.

Plantains--Production and export of plantains in 1959 reached the highest level in several decades, but this was more than doubled in 1960 when 1,825 tons were exported. Trinidad is the principal market. Although British Guiana exports plantains, it also imports this commodity from Surinam. By limiting these imports in 1960, a large outlet was created in Berbice, the county adjacent to Surinam. With the rapidly increasing production of plantains, the Government is seeking new markets.

Cassava--About 766 tons of cassava were purchased by the Marketing Division in 1960, or 30 percent less than in 1959. Exports of cassava starch decreased sharply from the previous year. Cassava, a staple food in the Rupununi, can be prepared in various ways. A coarse flour is made from the root of the bitter cassava by soaking and squeezing it to remove prussic acid, then roasting and grinding the root. This flour may be eaten with moist food or as a porridge with milk, or may be baked into flat cakes. The extracted juice of the root may be made into tapioca, starch, or a fermented beverage called "parakari." The root of the sweet cassava is boiled and eaten as a vegetable.

In the Rupununi area, cassava is planted the last 2 years in a 3-year rotation with corn in the bush islands and corrals. It is harvested after 12 months rather than 9 as elsewhere. Although two crops are grown, the second year's yields are poor.

Corn--Corn purchased by the Marketing Division amounted to 836 tons in 1960, of which 112 tons were exported to Trinidad, its principal market. Corn is used for poultry and animal feed and ground for human consumption. Cornmeal produced in the local factory supplied nearly all of the country's requirements in 1960. Because of its good quality, demand for cornmeal increased and imports dropped sharply.

On the Rupununi savannas corn is not grown in the open but in the forest and bush areas. After the forest is felled and burned with only a few large trees remaining, the land is planted in corn for 1 year followed by 2 years in cassava. Then the land is left fallow for 10 to 15 years. Corn grown in corrals near homesteads have given good yields. The corral is used for keeping dairy cows and horses at night. The rotation is 1 year of corn, 2 of cassava, and 1 as a corral. A few alluvial sites near the Rupununi River can produce excellent corn crops for 4 to 5 years; then smut becomes serious, and the land is left in bush for 10 years before further use.

Tobacco--A small quantity of tobacco is grown in the Rupununi district, where it was introduced from Brazil. Sometimes tobacco is rotated with cassava, but needs to be fertilized for good results. Caterpillars do considerable damage to the leaf on forest sites, whereas in corrals they cause little trouble. The air-curing method used here gives a heavy black-type product which is very strong. The tobacco official stationed in the district not only gives help and guidance in flue-curing to the growers, but also makes field tests.

Tobacco and balata are the only cash crops which bring money into the Rupununi district. These crops are usually marketed through local agents who send them to factories or agents in Georgetown. Some ranchers and small landholders send their products direct to the buyer.

Balata is collected in the forests. Carnauba wax, used in varnishes, is a product of the Itê palm, Mauritia flexuosa, which grows abundantly in the creeks and sluggish drainage-ways in the Rupununi.

Tonka beans and Brazil nuts are to be found in the forests to the south between the headwaters of the Takutu River and eastwards towards the Courantyne River. Wild tree cotton in the Rupununi is used on a limited scale in weaving hammocks. A cotton expert who visited the area suggested encouraging the development of cotton as a cottage industry.

The tropical fruits grown in British Guiana include pineapples, bananas, mangoes, avocados, guavas, sapodillas, and papaw (papaya). Tomatoes and green leafy vegetables are produced in good quantity. Fruits and vegetables are not grown extensively in the Rupununi, however, due in part to the ravages of the leaf-cutting ant. With the increasing population of the country and the growing administrative importance of a few centers associated with the cattle industry in the Rupununi, there is a need for intensive vegetable production on selected sites.

An attempt is being made by the Government to determine those commodities which grow best in specific areas and to promote their culture. For example, through the farm cooperative in the North West District, it is well known that the uplands in that area grow excellent yams, corn, oranges, grapefruit, avocados, and peanuts, and that the soil is adaptable for growing tomatoes, peas, and soybeans. Also technical advice is being sought as to the possibility of establishing a vast growing area and commercial center for peanuts and soybeans.

Tests by the Department of Agriculture show that sesame and such legumes as castor beans, dhall (Cajanus cajan), blackeye peas, and mung beans can be grown successfully on well-drained beds of peat soil. Since rice grows on similar soil, a crop rotation system with these crops is being tried to determine whether such short-term crops may be grown on the rice lands during the period that they are lying fallow. Successful legume cultivation would help to reduce the imports of pulses which amount to over $400,000 annually. More than 150 acres of land are now being prepared for growing sesame and castor beans. These oil seeds are intended for export and to supplement the local market which is often in short supply.

Other crops tested that have given excellent performance to date are black pepper, vanilla, and kapok.

Livestock and Livestock Products

The livestock population of British Guiana has been decreasing (table 7). Between 1952 and 1960 decreases ranged from 7 to 20 percent for the various kinds of livestock. The only exception is poultry, and the commercial production of broilers alone in 1960 was more than the total chicken population in 1952.

Table 7.--British Guiana livestock population, selected years 1952 and 1960

Kind	1952	1958	1959	1960
Cattle...	174,434	172,000	175,000	160,000
Sheep....	43,081	36,000	40,000	40,000
Hogs	25,182	37,000	20,000	20,000
Goats....	11,946	12,000	12,000	10,000
Asses....	7,733)			
Horses...	3,121) 10,916	10,000	10,000	9,000
Mules....	62)			
Oxen.....	32,210	1/	1/	1/
Chickens.	392,846	1/	1/	2/ 398,000
Ducks....	45,000	1/	1/	1/
Turkeys..	4,879	1/	1/	1/

1/ Not available.
2/ Commercial production of broilers only.

Source: British Guiana, Agricultural Census 1952 and Annual Reports 1958-60.

The decrease in the numbers of cattle, sheep, and goats is caused by the conversion of pasture to rice land; and as mechanization increases, a decreasing need for work oxen and other animals for transport. The hog industry declined because of short supplies of copra meal, low grade rice for feed, and the low price of imported pork.

In 1960 there were 160,000 head of cattle comprising dairy and beef breeds.

Dairy Cattle--Dairy cattle are raised mainly on the coastlands by small crop farmers and by a few specialized small dairy farmers.

Cattle belonging to the small farmers are of the Creole (native) breed, but there are also some Zebu cattle and Creoles with a Hereford strain. Some herds, containing Holstein-Friesian strains, are maintained by the sugar estates to provide milk for the estate hospitals and staff.

The native cattle are being upgraded by crossing with Holstein bulls, and through a mobile artifical insemination service provided by the Department of Agriculture within the milk-shed areas of Georgetown and New Amsterdam. Also the Central Agricultural Station imported 70 purebred Holstein heifers from the United States in 1960 to improve their dairy herds. But lasting improvements will depend on improved pasture and better cattle management.

Demonstrations of approved livestock practices have been given on the coast to leader training and rural youth groups and a wide variety of instruments commonly in use elsewhere, but unknown here,were introduced for demonstrational purposes.

Planned development of the dairy industry is aimed at increasing the standard of nutrition of the population. Figures prepared by the British Guiana Department of Agriculture indicate that the consumption of fresh milk (mostly nonpasteurized) in Georgetown in 1960 was approximately one-fourth pint per person per day. In most country districts it would be far less. Installation of cooling equipment in the milk plant last fall and maintenance of a quality control staff of dairy inspectors are intended to provide a clean, marketable supply of milk and make possible a wider milk distribution. As farmers tend to produce milk only outside the rice planting or harvesting season, however, irregular production quantities result that will be difficult to level off.

Another aim of the planned development is to help new settlers get established on plots of peat soil set aside for dairy purposes. Factors still unknown are the annual carrying capacity on grassland economy, the amounts of fertilizer required, and whether the soil can be grazed during very wet weather.

The Central Agricultural Station is testing numerous imported varieties of grass and legume seeds and vegetative planting material for the coastal zone. It is seeking a suitable legume for a grass-legume pasture association, as it is doubtful that farmers will be willing or financially able to purchase the fertilizer needed which research thus far indicates will be necessary for suitable grass yields. The three grasses which have given a satisfactory overall performance are Pangola (Digitaria decumbens), Coastal Bermuda

(Cynodon dactylon), and Para (Brachiaria mutica), the last named being indigenous to the country.

Over 12 million pounds of milk products are imported annually, mostly from the Netherlands. The United States supplied about 30 percent of the dried milk in 1960. The Government hopes to reduce milk imports by local production. In 1960 about 2.8 million gallons of milk were produced, from which about 625,000 gallons were taken by the government's modern milk pasteurization plant in Georgetown. The plant has increased its milk intake and successfully introduced such products as chocolate milk on the local market. Pasteurized bottled milk was sold at 19 cents a quart retail.

Beef Cattle--Beef cattle are raised principally in the Rupununi and Intermediate savannas. There are also some small beef herds in the coastal area.

The Department imported Brahman, Santa Gertrudis and Sahiwal Zebu cattle to upgrade the local beef breed at the two livestock research stations operated by the Government--at Ebini and St. Ignatius.

The Ebini Station was established in 1941 to investigate cattle ranching possibilities in the Intermediate savannas. Here it was found that fertilized Pangola grass and a mineral mixture fed to Santa Gertrudis x Creole cattle produced about 250 pounds of beef per animal per acre.

The St. Ignatius Livestock Station carries on research work for the Rupununi savannas on range management, mineral feedings, and types of beef cattle.

British Guiana is self-sufficient in fresh beef, but salted meat is still imported, largely from the United States. Exports of approximately 93,000 pounds of beef were flown from the Rupununi to French Guiana and Martinique in 1960. About 240 head of cattle were supplied to Surinam via Springlands on the Courantyne.

Cattle hides are exported, but many are wasted during the rainy season because the cost of transportation makes marketing unprofitable.

Beef output increased in 1960, 21,640 head of cattle were slaughtered compared with 20,900 in 1959. The two government owned and operated slaughter houses are at Lethem in the Rupununi and at Georgetown. The coastal cattle supply the rural areas and villages with meat, while Georgetowns's main supply comes from Lethem. The Livestock Control Organization purchases all cattle and dressed carcasses intended as beef supplies for the coast. The purchase price had been controlled and altered from time to time according to the current cost of living, but at the end of 1956 the price control on beef was removed. About 75 percent of the cattle produced in the Rupununi for the Georgetown market are slaughtered at Lethem and the carcasses flown to the Georgetown airport at Atkinson Field, the other 25 percent go by jungle trail (fig. 3). Beef flown to Georgetown in 1960 exceeded 1.8 million pounds.

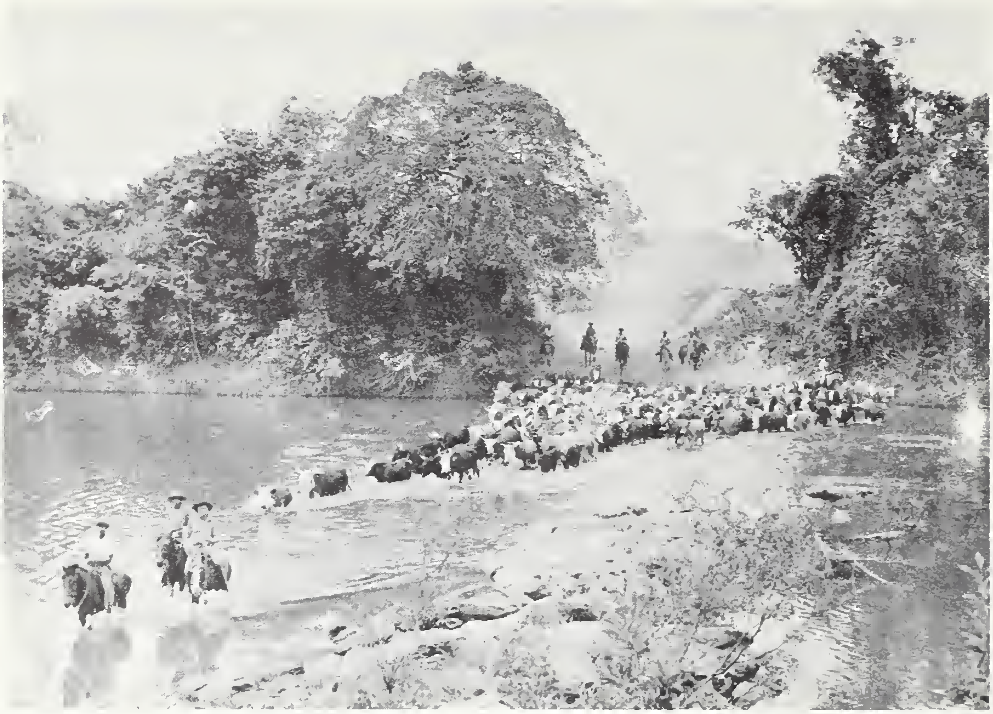

Figure 3.--Cattle crossing the Rupununi River on the 180-mile trail to the coast for slaughter. Courtesy of British Information Services.

The effective use of the savannas for raising stock is becoming increasingly important with the shrinkage of pasture on the high-priced lands of the coastal belt. The problem of pasturage concerns the inadequate grasses in the savannas. Reports from the Agriculture Department indicate that the carrying capacity of the ranges is being increased six-fold by planting Pangola grass and using fertilizers and supplementary mineral feeds.

In 1958 the Rupununi savannas carried stock in the ratio of approximately 70 acres per head of cattle. This is an average figure since much of the area is not fit for grazing of any kind. With the new grasses this ratio may be expected to drop considerably. Generally, grazing on the higher lands is considered of little value, and the number of cattle that can be carried on any given area is limited by the extent of the swamps.

In the past ranchers were reluctant to introduce improvements in their methods of stock management because of the conditions of tenure. Until a few years ago all land was held on an annual lease basis. One company now, however, has a 21-year lease on its 1.6 million-acre holding, while a rancher has acquired a 25-year lease on a 64,000-acre ranch.

There have been no reports that foot-and-mouth disease exists in the coastal belt though there has been some on the savannas. In 1954 an outbreak occurred in the Rupununi following which the trail was closed, and again in 1962 when the district was quarantined. Although tuberculosis occurs in cattle and hogs, it is not considered prevalent by local authorites. Brucellosis may be a factor in the poor conception rate of cattle under the artificial insemination program. Economic loss to the livestock industry from screw worms is said to be extensive, but no accurate data of losses are available.

Cattle raising is the most promising agricultural operation in the Mahdia Valley, location of the old gold mines. Some of the cows are milked to supply local needs. The Valley is connected by a good road to Bartica which is on the Essequibo River. Lucunto grass, Ischaemum timorense, appears to be the main feed of the small herds and thrives on road sides and on some of the older dredge tailings from mining. The animals are normally provided with mineral concentrates through supplemental feedings. However, because of the low nutrient reserves and heavy leaching of the soils, a heavy persistent and costly fertilizer program will be needed.

Hogs are kept by small farmers. Of the 20,000 hogs on farms in 1960 over 9,000 were slaughtered in the abattoir. This represents a drop of 46 percent in numbers and 33 percent in slaughter since 1958. The drop in hog slaughter was partially offset by increased slaughter of cattle.

Hogs slaughtered at Lethem are sent to Georgetown for processing. The shortage of hogs in 1960 caused a general increase in prices. The marketing division paid 33.7 cents per pound for bacon-type hogs, (carcass weight) or 1.6 cents per pound more than in 1959. About 10,800 pounds of ham and 23,800 pounds of bacon were produced in 1960, while imports of bacon and ham the same year amounted to 77,500 and 160,600 pounds, respectively. The United Kingdom and Denmark supply over 50 percent of the bacon, and Canada over 60 percent of the ham. The United States has a small share of the market for these items.

A strong demand for increased hog production together with a larger supply of broken rice available for feeding livestock has lead to the development of a new hog-feed formula to be prepared by the government processing factory. This work has reduced the price of hog feed by approximately 59 cents per 100 pounds.

In order to encourage production of the bacon-type hog, the Department of Agriculture imported Large White and Landrace boars and gilts from Canada thus increasing the local supply of good breeding stock.

Sheep and goats are raised throughout the country. The population for 1960 is estimated at 40,000 sheep and 10,000 goats, but the number slaughtered in Georgetown was 604 sheep and 447 goats, which represents a small part of the total production. Most of the animals are slaughtered and consumed on the farms, principally by the East Indian community.

Sheep do better on the interior savannas and coastal reefs than on the low lying coastal lands. Breeds introduced from time to time to improve the local sheep are Border Leicester, Barbados Black Belly, and Wiltshire Horn. British alpine and a few Saanan goats are reared on a small scale for milk production.

Poultry are kept on almost every farm in the country. Eggs and meat are consumed on farms where produced and only the surplus is sold. It is therefore difficult to estimate the population or production of poultry. A rough estimate of consumption in 1961 is 1.3 million pounds.

Commercial production of poultry has been increasing rapidly since the late fifties. Output in 1960 was 1,096,700 pounds--82.8 percent higher than in 1958. Large producers are concentrated near the Atkinson Airport, where baby chicks from the United States arrive, and near Georgetown, a large consumption area. Baby chicks are purchased largely from commercial hatcheries. Egg production has not been organized and developed like the broiler production.

Two popular breeds of poultry in British Guiana are Rhode Island Red and White Leghorn. Broilers weigh about 2-1/2 to 3 pounds when 8 weeks old. British Guiana is outstanding in the Caribbean area in efficiency of broiler production.

Prices in 1959 were tightly controlled by an organization of large poultry producers called the Broiler Council and remained steady at about 58 cents per pound, while eggs sold for about 71 cents per dozen. However, the industry predicted a drop in prices because of (1) increased competition from new producers, (2) the elimination of middlemen, as poultrymen continue to set up their own outlets, and (3) the decreased need for importing hatching eggs and baby chicks. Such imports are large and come almost exclusively from the United States. In 1960, the approximate value of these imports were: eggs $11,300, baby chicks $32,000, and fresh poultry meat $47,800. Poultry meat imported consists mostly of turkeys, capons, and other special types. Over 25,000 baby chicks and about 6,000 pounds of poultry meat, valued about $9,000, were shipped to Surinam, French Guiana, and Trinidad.

In order to protect the poultry industry, legislation was passed in June 1961 which prohibited importing poultry meat. However, the ban was lifted temporarily the following December as demand for poultry meat increased because cattle from the Rupununi were quarantined following an outbreak of foot-and-mouth disease.

Because of the high cost of imported poultry feeds, rural poultrymen often find it difficult to make a profit. Poultry specialists have suggested a system of importing a high protein concentrate fortified with vitamins, minerals, and antibiotics and adding to it local carbohydrate feeds, such as broken rice, rice bran, and copra meal. By doing this the cost of feed could be reduced from 12 to 15 cents per pound to 6 to 9 cents per pound.

The owner of a small flock of poultry tried this system with good results, he halved his feed costs and quadrupled his profits. To make a 16 percent protein laying ration, he used 1-part concentrate, 2-parts rice bran, and 2-parts broken rice.

A stock and poultry feed processing plant was opened in November 1961. This plant will require 100 to 200 tons of corn monthly which will be imported. The feed will be primarily for poultry and is expected to reduce the large annual imports of feedstuffs valued at over half a million dollars.

A large portion of the population cannot afford to buy poultry because of the high price, but as production expands, prices will decline enabling many more people to buy this product. Therefore, marketing problems are not expected in the foreseeable future. In spite of high feed costs, the good conversion ratio and other advantages, such as simple, low-cost housing, will permit the farmer to compete successfully, even at a price lower than that he now receives.

The remarkable growth and expansion of the British Guiana poultry industry in recent years is a tribute to the hard work of a relatively few pioneering farmers, to the British Guiana Credit Corporation, and to technical assistance in poultry production.

While this expanded industry has reduced U.S. exports of poultry meats to British Guiana by $20,000 from 1958 to 1961, exports of baby chicks have increased by $15,000 and mixed poultry feed by $309,000 during this 4-year period. At the same time British Guiana has been able to increase its consumption of poultry and thus its much needed protein intake.

Horses are kept mainly for riding and are used on ranches in the interior; they are small but of a useful type. The mules used for estate work are imported from the United States. Donkeys are owned by the peasants and receive little care. Production of rabbits, geese, ducks, and turkeys is of little significance; the last three are imported, mainly during the Christmas season.

Honey is produced by large apiaries and by an increasing number of smaller beekeepers throughout the country. About 110,000 pounds of honey and 2,000 pounds of beewax were produced in 1960. Honey retailed for approximately 15 cents a pound and beeswax 83 cents a pound.

TRADE

British Guiana's external trade is steadily expanding. The country exports primary products--chiefly sugar, rice, bauxite, lumber, diamonds, and recently manganese, and imports processed foodstuffs, machinery, and manufactured articles.

The United Kingdom is first in the export and import trade, usually followed by Canada and the United States; but in 1960 the United States was second in value of total trade. Both U.S. purchases from and sales to British Guiana have more than doubled since 1955.

The agricultural trade of the country has more than doubled since 1950, but its importance relative to total trade has decreased slightly. This is due mainly to increased exports of bauxite and diamonds, and to purchases of machinery and transport equipment.

With imports rising faster than exports, British Guiana's visible trade deficit widened from $4 million in 1959 to $12 million in 1960. However, the Government expects the deficit to remain at about this level during the current 5-year development program.

Table 8.--Principal agricultural exports: Commodity, quantity, and value, British Guiana, 1958-1960

Commodity	Unit	Quantity			Value		
		1958	1959	1960	1958	1959	1960
					1,000 dol.	1,000 dol.	1,000 dol.
Agricultural:							
Sugar, raw	1,000 s.t.	336	286	346	32,070	27,168	33,718
Rum	Gallon	2,445	2,192	1,901	2,024	2,060	1,770
Molasses	do.	12,531	12,354	15,767	1,494	1,372	1,585
Rice, milled	Short ton	19,798	55,920	70,760	2,800	7,343	9,021
Coffee beans	do.	209	268	236	160	183	156
Cacao beans	do.	11	19	6	5	8	2
Limes and products	do.	---	---	---	21	17	13
Plantains	do.	404	810	1,835	21	43	97
Cassava starch	do.	101	185	106	[1]	23	13
Corn	do.	270	80	112	25	5	9
Balata	do.	202	340	266	213	349	311
Hides and skins	do.	200	171	198	19	19	25
All other	---	---	---	---	305	1,025	480
Total agricultural	---	---	---	---	39,157	39,615	47,200
Nonagricultural:							
Wood and lumber, simply worked	---	---	---	---	2,124	1,961	2,073
Bauxite	---	---	---	---	12,049	14,526	17,285
All other	---	---	---	---	3,646	4,561	7,760
Total exports	---				56,976	60,663	74,318
					Percent	Percent	Percent
Percentage agricultural	---				68.7	65.3	63.5

[1] Not available.

Exports

During the period 1958-60 an average of 65 percent of the country's export earnings came from agricultural commodities and 23 percent from bauxite (table 8).

In 1960, sugar, rum, and molasses accounted for about 50 percent of the value of total exports, rice for over 12 percent, and the other agricultural commodities for less than 2 percent. The same year exports of the major agricultural commodities increased over the previous year, except for rum, coffee, and balata.

While sugar exports have increased slightly since 1958, the importance of sugar in total agricultural exports has been decreasing with the upward trend in rice exports. This is in accordance with the Government's plan to broaden the economic base of the country and avoid too great a reliance on one crop.

Agricultural exports amounted to $47.2 million in 1960. Over 8 percent, or $3.8 million,of this went to the United States and consisted mainly of sugar, with small quantities of coffee, cacao, molasses, and lime juice.

The United Kingdom and Canada take most of the Guianese sugar, about 39 and 32 percent, respectively, in 1960. The United States purchased 9.6 percent at this time.

Although the West Indies continues to absorb most of British Guiana's output of rice, in 1960 over 2 percent was sold to Belgium, Guadeloupe, the Netherlands, the United Kingdom, and Chile. Cuba purchased 33,152 tons of the 1961 crop and is expected to be a steady market for this commodity.

Canada and the United States are the principal markets for the country's second most valuable export--bauxite. In 1960, exports to each country were about 67 and 26 percent, respectively, followed by 2.1 percent to the United Kingdom.

The United Kingdom received most of the balata and diamonds, and some wood and lumber.

Exports of hides and skins, valued at $25,000 in 1960, went mainly to the Netherlands and the United Kingdom.

Imports

Agricultural imports, which account for approximately 20 percent of total import value, consist mostly of food items (table 9). The principal agricultural imports are wheat flour, milk, butter, cheese, pulses, potatoes, feedstuffs, and tobacco leaf.

In 1960 agricultural imports amounted to $16.9 million and came principally from the United States, Canada, the Netherlands, and the United

Table 9.--Principal agricultural imports: Commodity, quantity and value, British Guiana, 1958-60

Commodity	Quantity			Value		
	1958	1959	1960	1958	1959	1960
	Short tons	Short tons	Short tons	1,000 dollars	1,000 dollars	1,000 dollars
Agricultural:						
Wheat flour	28,413	30,053	29,721	2,499	2,688	2,626
Beef, salted	617	427	505	337	231	255
Pork, pickled	499	578	551	261	235	206
Ham, smoked or canned	116	109	139	149	135	173
Other meat and meat preparations	---	---	---	388	430	571
Milk, condensed and evaporated	5,173	4,729	5,184	1,510	1,350	1,534
Milk, dried	742	1,036	1,068	541	526	711
Butter and cheese	906	713	925	587	565	749
Lard and lard substitutes	298	410	585	99	120	168
Potatoes	8,692	7,446	7,696	565	506	496
Pulses	2,899	2,904	3,317	421	449	502
Onions and garlic	2,351	2,482	2,637	294	301	307
Other vegetables and preparations	1,169	1,178	1,378	272	497	341
Fruit, fresh, dried, and preparations (excluding juices)	2,048	1,610	2,053	529	403	478
Peanuts	474	559	620	152	182	201
Spices	---	---	---	161	244	257
Tea	119	113	113	208	199	205
Tobacco leaf	408	358	370	541	457	433
Feedstuffs	---	---	---	455	713	842
All other	---	---	---	1,565	3,064	5,824
Total agricultural	---	---	---	11,534	13,295	16,879
Nonagricultural:						
Fertilizers	30,582	31,135	27,569	1,749	1,430	1,152
Wood and lumber, simply worked	---	---	---	200	187	217
Fish and fish preparations	---	---	---	1,163	1,171	1,389
All other	---	---	---	53,345	48,740	66,629
Total imports	---	---	---	67,991	64,823	86,266
Percentage agricultural	---	---	---	Percent 17.0	Percent 20.5	Percent 19.6

Kingdom. The U.S. share was roughly a fourth, mainly for wheat flour, poultry feed, fresh and salted meat, and unmanufactured tobacco.

Nonagricultural imports include almost all British Guiana's requirements for manufactured consumer goods, capital equipment, fertilizers, and fish.

Trade Policies

An Open General License is required to import any commodity, but licenses are granted without discrimination. Special permits are required, however, for the following agricultural items: wheat flour, corn, cornmeal, starches, cattle, fresh beef and pork, poultry meat, bacon and ham, eggs, milk, coffee, root crops, manufactured tobacco, rum, molasses, sugar, fats and oils (by regional agreement) and their related products, and rice. Controls are retained on most items in order to stimulate and protect local industries.

Formerly imports were subject to exchange control which discriminated against imports from the United States and other dollar-area countries. But in 1959, following similar action by the United Kingdom, British Guiana liberalized trade with the dollar-area countries.

As a Commonwealth country, British Guiana shares in Commonwealth preference. In addition, its sugar has a further preference advantage--a negotiated price (for a quota) which is more than 50 percent above the world market price.

The general tariff is 10 to 20 percent higher than the preferential tariff, and thus discriminates against the United States and other non-Commonwealth countries.

Early in 1962 tariffs were raised steeply on processed coffee and tobacco products.

Trade with the United States

British Guiana is a small but steady market for U.S. commodities. During the 1955-59 period imports averaged $7.4 million annually. In 1960 purchases from the United States, valued at $17.1 million, more than doubled that of the previous year. But this rise was due chiefly to increased shipments of machinery, transport equipment, and manufactured articles. Agricultural purchases increased by less than $1 million but was over 30 percent higher than in 1959. U.S. share of British Guiana's market--19.8 percent--is not expected to change significantly in the near future (fig. 4).

British Guiana's exports to the United States are principally bauxite, lumber, and diamonds and since 1960, sugar. Exports to the United States averaged $5.1 million during the 1955-59 period and rose to over $12 million in 1960, of which 38 percent was for bauxite. U.S. share of all British Guiana's exports in 1960 was 16.4 percent. Since 1960, agricultural trade with the United States has increased.

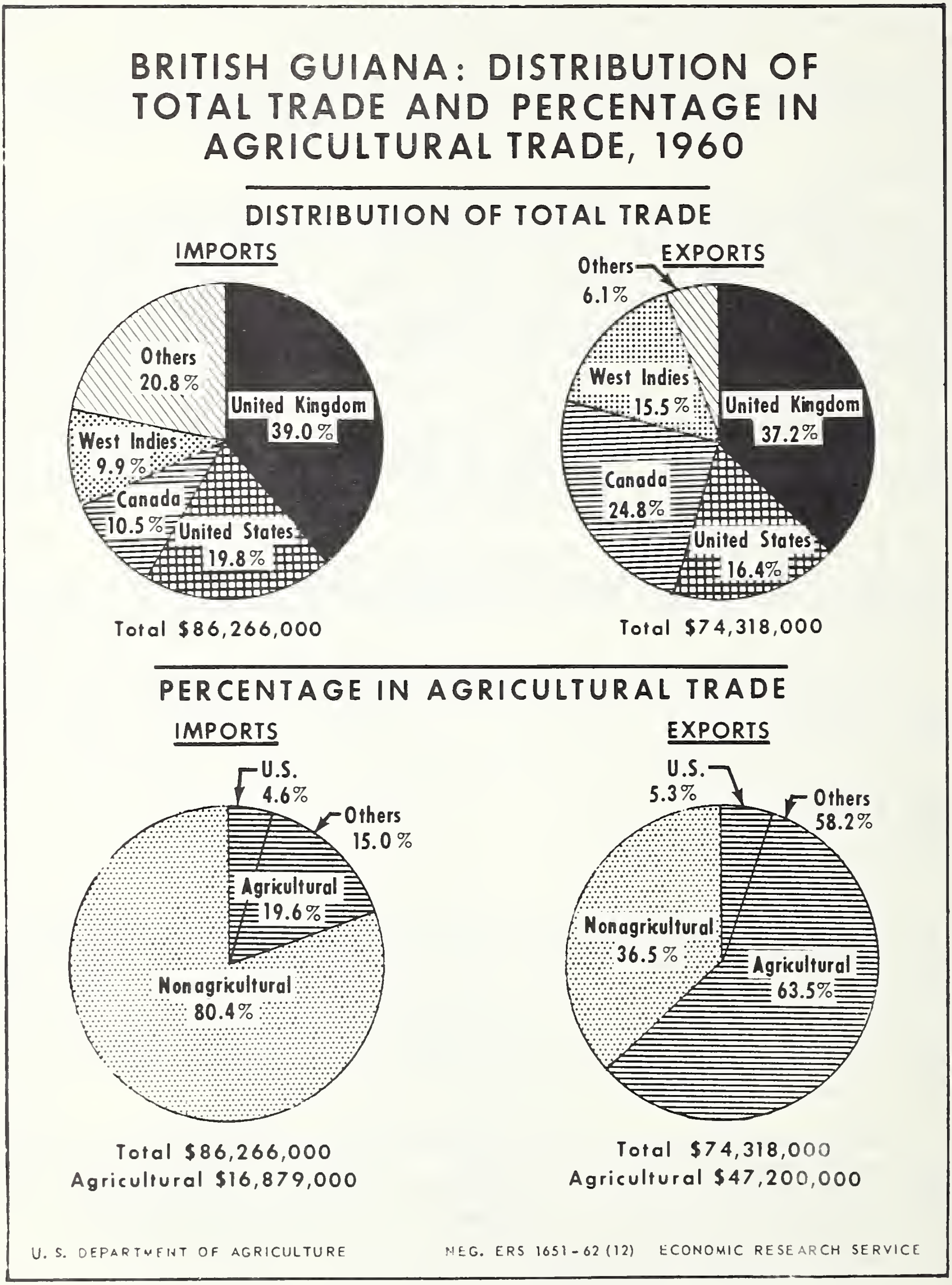
BRITISH GUIANA: DISTRIBUTION OF TOTAL TRADE AND PERCENTAGE IN AGRICULTURAL TRADE, 1960
DISTRIBUTION OF TOTAL TRADE
IMPORTS
Others 20.8%
United Kingdom 39.0%
West Indies 9.9%
Canada 10.5%
United States 19.8%
Total $86,266,000
EXPORTS
Others 6.1%
West Indies 15.5%
United Kingdom 37.2%
Canada 24.8%
United States 16.4%
Total $74,318,000
PERCENTAGE IN AGRICULTURAL TRADE
IMPORTS
U.S. 4.6%
Others 15.0%
Agricultural 19.6%
Nonagricultural 80.4%
Total $86,266,000
Agricultural $16,879,000
EXPORTS
U.S. 5.3%
Others 58.2%
Nonagricultural 36.5%
Agricultural 63.5%
Total $74,318,000
Agricultural $47,200,000
U. S. DEPARTMENT OF AGRICULTURE
NEG. ERS 1651-62 (12)
ECONOMIC RESEARCH SERVICE

Figure 4

OUTLOOK FOR AGRICULTURE AND TRADE

British Guiana has made substantial economic progress in recent years. Future progress will depend to some extent on its ability to attract new industries and to develop its natural resources.

Two measures taken in 1961 have served to dim the short-term outlook for the country's economy. They are the Government's "austerity budget" that destroyed commercial and investor's confidence which may take several years of concerted positive effort to regain, and removal of the "pioneer industries" benefits previously offered new industries.

The Government has decided to establish a Planning Unit to work out long- and short-term plans for accelerating the general economic development of the country. With the assistance of the United Nations, AID, and others, qualified economists are being secured from abroad for this purpose.

The bauxite industry is expected to maintain its important export position in the nation's economy. A spurt in the economy was given by the new alumina plant erected in 1960 at Mackenzie, the bauxite center. This settlement, the furthest navigable point, is about 60 miles up the Demerara River.

The large manganese operations in the North West District may help to open up that area for settlement and expansion. Diamond exports probably will continue at the present level of $3 million. The closing of the only large gold mining company in 1958 depressed the entire gold industry whose operations are expected to remain at a low level.

Plans for hydroelectric development await the availability of capital. This will supply the power needed for industrialization. Until the removal of the "Pioneer Industries" benefits in 1961, the Government was eager to establish new industries. Local interest was keen; plans were made for such small plants as a shirt, a shoe, and a candy factory, and a cement plant, but all commercial activity has slowed up because of political uncertainty. No large industrial development is practicable until the population is large enough to support it, or unless there is easy access for an export market. A small canning factory is being established by local industry and has good opportunities for growth.

The interior of British Guiana continues to present a special problem--one of opening up the country by roads, locating agricultural land and establishing settlements as is now being done in the coastal area. This is necessary if the country is to avoid overpopulation in the coastal zone and if it is to make full use of its resources.

The country has a 5-year program of economic development under which land continues to be reclaimed and used for settling the landless worker. But the crop diversification program has not received the full cooperation of the farmer who prefers the quick returns afforded by growing rice. An effective program of crop diversification will broaden the agricultural base, make the country more self-sufficient in certain commodities, and expand the export crops.

Soil surveys show fertile areas scattered through the interior in the valleys. If a road were built across the country to Lethem, some of these areas might become more accessible. In the Rupununi, with its extensive ranching areas, water for domestic purposes is obtained by using windmills and pumps. This method is also used for watering kitchen gardens. There are no concrete catchments for trapping rainfall as used in other seasonally dry areas.

A Cooperative Country Marketing Plan has been submitted to the Director of Marketing. When this is put into effect, it will help to eliminate the old methods of marketing and to introduce commercialized modern merchandising which will tend to bring about a rapid upgrading of the agricultural economy.

Although the sugar industry had good export years in 1960 and 1961, the long-term outlook is not encouraging. To meet the high costs of sugar cultivation necessitated by the requirements of fertilizers, drainage, and irrigation, the sugar producers have modernized and centralized their operations. This has eliminated jobs on estates and in factories. The resulting unemployment has contributed to the opposition to the industry.

British Guiana's concern with the entrance of the United Kingdom into the Common Market hinges on the threatened loss of this guaranteed market at a high price quota for its sugar. Its second most important crop, rice, is not dependent on this market. The United Kingdom sugar agreement expires in 1969, and the U.S. premium for a sugar quota to British Guiana, granted in 1962, will be reduced during the next 3 years (10 percent the first year, 20 percent the second, and 30 percent the third) after which only the world market price will be paid. Therefore British Guiana has 7 years in which to adjust its economy and expand crops that will be more competitive on the world market than sugar, the high-cost-production crop.

Rice production will continue to increase as the land devoted to rice cultivation is expanding under government sponsorship at the rate of 15,000 to 20,000 acres per year. The industry, however, is beset by many problems, such as finding new markets for the country's increasing production of rice. Even if this were satisfactorily solved, it will be many years before rice can equal sugar as an export earner. Moreover, in the long run, the high cost of producing rice may make it difficult to find export outlets. Therefore it is important that the farmers be encouraged to grow other crops.

As cacao prices improve, a concerted drive may be undertaken to establish this crop on a sound footing in the next few years.

The outlook for the dairy and livestock industry is encouraging. The local market is large enough to absorb all the milk and meat the country can produce for some time to come. In order to handle the milk production, the Government is considering establishing a complete condensing plant. This plant will take care of good quality surplus milk and provide processed milk for domestic distribution to substitute for the imported product; also processed milk will serve people who do not readily convert to fresh milk. Thus imports of milk products, which amount to $2 million annually, will tend to be reduced.

Crops of the future which have been tested and found satisfactory for local conditions are black pepper, vanilla, and kapok. These materials will be propagated by the agricultural station as needed.

British Guiana's agricultural trade over the next several years will depend upon both general economic conditions and the success of efforts to develop and diversify agricultural production.

Agricultural exports of sugar, rice, coffee, balata, plantains, and hides are expected to continue, the levels depending upon production and internal needs. Little increase in exports is foreseen in the next few years except for rice, plantains, and hides, with a decline in prospect for sugar. Direct competition with the United States is not expected to increase in rice since such exports are expected to continue to British Guiana's traditional markets--Jamaica, Trinidad, Barbados and other British Islands in the Caribbean--and a more recent market, Cuba.

Continued imports of wheat flour, processed meat, dairy products, and other foodstuffs and feed are expected. Changing requirements, due to increased population and local production shifts, are expected to increase import needs for flour, milk products, pulses, and feedstuffs, and decrease import needs for baby chicks, poultry meat, and coffee. Improved economic conditions could increase such imports significantly. As a consequence, short range prospects are favorable for increased U. S. exports to British Guiana for wheat flour, salted beef, salted pork, poultry feed, and canned fruits and vegetables.

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